PROCUREMENT AND CONTRACT MANAGEMENT

Child Welfare Information Technology Systems Managers and Staff Webinar Series

Requirements for Requirements

December 19, 2013
2:00 p.m. – 3:30 p.m. EDT

Joyce Rose, ICF
Mary Kernander, NH

Child Welfare Information Technology Systems Managers and Staff Webinar Series

- Eleven webinars divided into two theme series between December 2013 and September 2014
- Target audience
  - Child welfare IT systems managers and staff
  - Program and policy staff
  - New and experienced
- Recorded webinars
  - http://www.acf.hhs.gov/programs/cb/research-data-technology/state-tribal-info-systems/training

Webinar Series: Procurement and Contract Management

- Webinar 1: SACWIS Assessment Review Report (SARR) Action Plan Development and Tracking (November)

- Webinar 2: Requirements for Requirements (December)

- Webinar 3: Writing and Evaluating an RFP (January)

- Webinar 4: Contract Negotiation and Management (February)

- Webinar 5: Managing Small Projects (March)

- Webinar 6: Managing Scope Creep and Change Orders (April)

- Webinar 7: Saying Goodbye to Your Vendor (May)

Participating in Today's Webinar

- Questions and comments by telephone

- Questions via chat

- If you have additional questions, please contact Joyce Rose after the webinar

  - Joyce@kassets.com

Attendee Poll

Who is attending today's webinar?

- State Child Welfare Information System (CWIS) Project Manager

- State Child Welfare Information System (CWIS) Program Manager

- State Child Welfare Information System (CWIS) Technical Manager

- State Child Welfare Information System (CWIS) Project Staff (Program, Policy or Technical)

- ACF/Children's Bureau Personnel

Today's Agenda

- Format

- Introductions

- Participant presentation

- Attendee Q & A

- Wrap up

Introduction of Participants

- Mary Kernander, NH

- Joyce Rose, ICF

General Definition of Business Requirements Documents (BRD)

- The emphasis in a BRD is on *what* is required, rather than on *how* to achieve it
- The *how* is usually captured in a Systems Requirements Specification or Document (SRS or SRD) or other variations such as a Functional Specification Document (FSD)
- The SRS, SRD or FSD facilitate the design of the technical solution proposed by a vendor

Business Requirement Documentation Content

- Summary of change
  - A paragraph or two of WHAT is being requested
- Explanation of <u>business need </u>including
  - A paragraph or two of WHY it is needed.
- Workflow diagrams
  - Shows HOW users <u>currently</u> perform their task.
- Stakeholders and business sponsor
  - A Stakeholder is someone who will be impacted by the request. Therefore, they have a real need to be involved during the entire process.
  - The Business Sponsor is WHO is driving this request.

Business Requirement Documentation Content, cont.

- Scope of request
  - The scope defines WHAT is impacted as well as WHAT IS NOT impacted by this request
  - The SCOPE puts boundaries around the request
  - These boundaries are adhered to throughout the analysis phase
- Outline of business requirements
  - Business requirements describe WHAT is being requested
  - Each business requirement needs to be associated with a number, which is why we call it an outline of business requirements
    - Numbering makes it easier to refer back to a specific requirement in subsequent documents

Business Requirement Documentation Content, cont.

- Use cases
  - Use cases help determine if all scenarios have been accounted for, and therefore can help uncover missing requirements
  - Use cases involve an "actor" (user type/role) and a step by step flow of how they perform a specific task

Validating the Business Requirement

- According to the IEEE 830 Documentation Standard for a Software Requirements Specification, the criteria for a high-quality requirements are as follows:
- <u>Unambiguous</u> -- Every statement has one interpretation
  - Terms are clear and well defined
- <u>Complete</u> -- All significant requirements are included
  - No items have been left for future definition
- <u>Verifiable</u> -- All new requirements have a corresponding test to determine whether they have been successfully delivered

Validating the Business Requirement, cont.

- <u>Consistent</u> -- Conflicting terminology, contradictory required actions, and impossible combinations are notably absent
- <u>Modifiable</u> -- Redundancy is absent; index and contents are correct
- <u>Traceable</u> -- Each referenced requirement is uniquely identified
- <u>Correct</u> -- Every stated requirement represents something required of the system
  - This may sound obvious, but it is surprisingly easy to include extraneous requirements, or requirements that really pertain to a separate system entirely

Questions to Ask When Writing a Business Requirement

1. Is it singular? (no 'and' or 'or')
2. Is it unambiguous?
3. Is it measurable?
4. Is it complete?
5. Is it cost justified?
6. Is it testable? (can the test output be measured, does it meet the other rules)
7. Is it achievement driven? (what is the benefit)
8. Is it business owned?
9. Is it consistent? (must not conflict with another requirement)
10. Is it necessary? (this might be covered by "cost justified')
11. Is it realistic? (would the user community really want this functionality)

Business Requirement Construction Guidelines *

- Keep sentences and paragraphs short
- Use the active voice
- Use proper grammar, spelling, and punctuation
- Use terms consistently and define them

*Taken from multiple sources, including but not limited to, Businessanalyst.com, ProcessImpact.com and *Mastering the Requirements Process* by Robertson and Robertson

Business Requirement Construction Guidelines, cont.

- Requirement authors often struggle to find the right level of granularity
- Avoid long paragraphs that contain multiple requirements
- As a guideline, write individually testable requirements
- If you can think of a small number of related tests to verify the correct implementation of a requirement, it is probably written at the right level of detail
- If you envision many different kinds of tests, perhaps several requirements have been lumped together and should be separated

Business Requirement Construction Guidelines, cont.

- Be mindful of multiple requirements that have been combined into a single statement
- Conjunctions like "and" and "or" in a requirement suggest that several requirements have been combined
- Write requirements at a consistent level of detail throughout the document
  - For example, "A valid color code shall be R for red" and "A valid color code shall be G for green" might be split out as separate requirements, while "The product shall respond to editing directives entered by voice" describes an entire subsystem, not a single requirement

Business Requirement Construction Guidelines, cont.

- Avoid redundant requirements
  - While including the same requirement in multiple places may make the document easier to read, it also makes maintenance of the document more difficult
  - Multiple instances of the requirement have to be updated at the same time thus leading to possible inconsistencies

Example 1: What's Wrong With This Business Requirement?*

"The product shall provide status messages at regular intervals not less than every 60 seconds"

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"The product shall provide status messages at regular intervals not less than every 60 seconds"

- This requirement is <u>incomplete.</u>
  - What are the status messages and how are they to be displayed?
- The requirement contains several <u>ambiguities.</u>
  - What part of "the product" are we talking about? Is the interval between status messages really supposed to be at least 60 seconds?
  - Is showing a new message every 10 years okay?
  - Perhaps the intent is to have no more than 60 seconds elapse between messages; would 1 millisecond be too short?
- The requirement is not <u>verifiable.</u>
  - The word "every" confuses the issue

Example 1: What's Wrong With This Business Requirement?*

"1. Status Messages.

1.1. The Background Task Manager shall display status messages in a designated area of the user interface at intervals of 60 plus or minus 10 seconds.

1.2. If background task processing is progressing normally, the percentage of the background task processing that has been completed shall be displayed.

1.3. A message shall be displayed when the background task is completed.

1.4. An error message shall be displayed if the background task has stalled."

Example 2: What's Wrong With This Business Requirement?*

"The product shall switch between displaying and hiding non-printing characters instantaneously."

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"The product shall switch between displaying and hiding non-printing characters instantaneously."
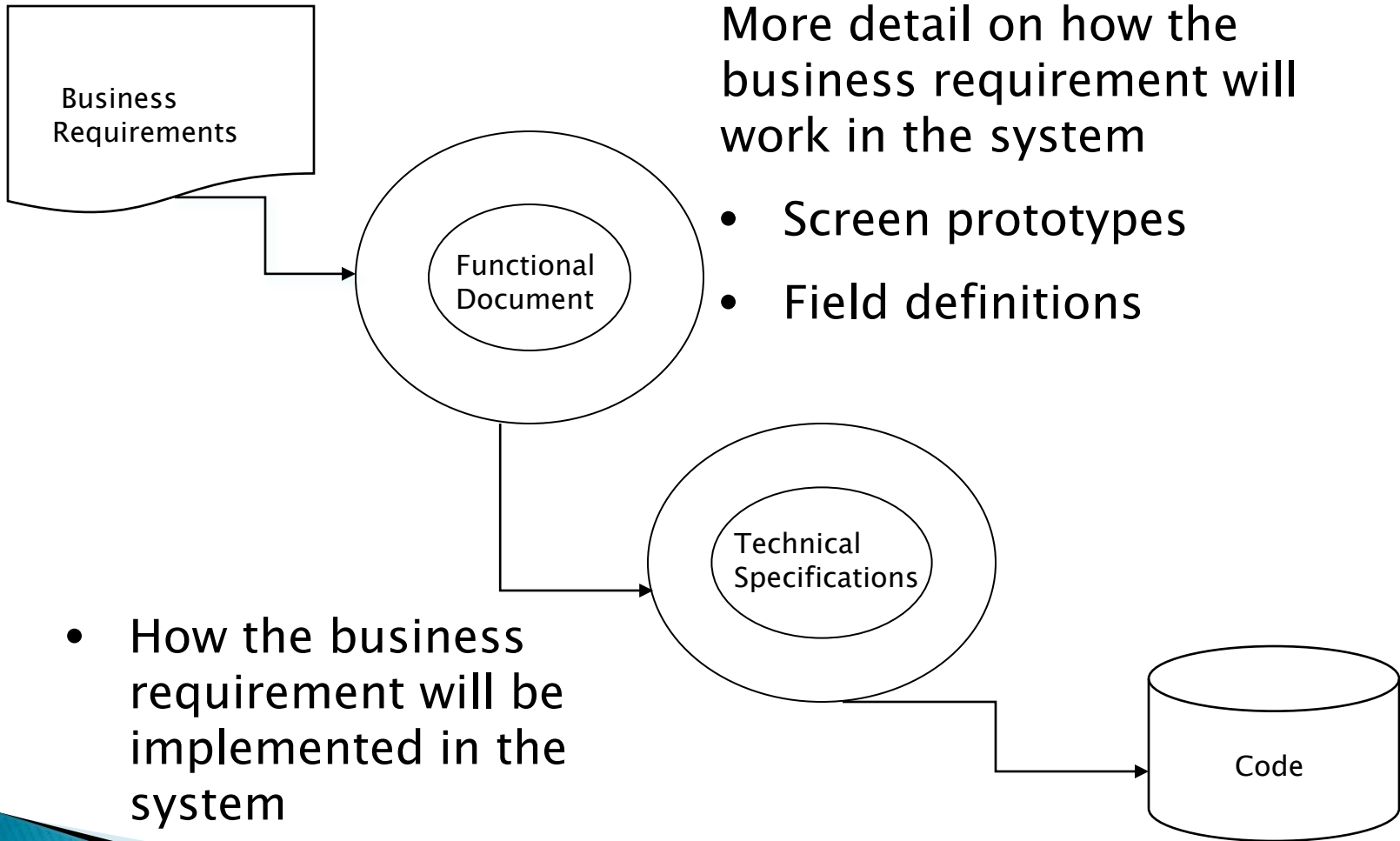
- This requirement is <u>incomplete.</u>
  - It does not state the conditions that trigger the state switch. Is the software making the change on its own under some conditions, or does the user take some action to stimulate the change?
  - What is the scope of the display change within the document: selected text, the entire document, or something else
- This requirement contains <u>ambiguities.</u>
  - Are "non-printing" characters the same as hidden text, or are they attribute tags or control characters of some kind?

Example 2: What's Wrong With This Business Requirement?*

"The user shall be able to toggle between displaying and hiding all HTML markup tags in the document being edited with the activation of a specific triggering condition."

The Business Requirements Document is Done…Now What?

Business Requirements

More detail on how the business requirement will work in the system

- Screen prototypes

- Field definitions

Functional Document

Technical Specifications

Code

- How the business requirement will be implemented in the system

Attendee Discussion

Today's Conclusion

- What was accomplished today?

- What's next?

- Reminders:

  - Follow-up

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  - Recorded versions of each of the six webinars are being made available at:

http://www.acf.hhs.gov/programs/cb/research-data-technology/state-tribal-info-systems/training